

REMARKS/ARGUMENTS

Applicant would like to thank the Examiner for the careful consideration given the present application. Reconsideration of the subject patent application in view of the present remarks is respectfully requested.

Claims 4-9, 30, 37, 39-44 and 46-49 are withdrawn.

Claims 20 and 45 are canceled.

Claim Objections

Claim 20 is objected to under 37 CFR 1.75(c) as being in improper dependent form for failing to further limit the subject matter of a previous claim. Claim 20 has been cancelled. Thus, the objection as it applies to claim 20 should be withdrawn.

Claim Rejections - 35 USC § 102/103

Claims 1-3, 12-17, 19-29, 36, 38, 50-52 and 54 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Hardy (US 5,514,312). Applicants respectfully request withdrawal of the rejection for at least the following reasons.

Claim 20 has been cancelled. Thus, the rejection as it applies to claim 20 should be withdrawn.

Regarding claim 1, Hardy does not disclose, teach or render foreseeable at least one film layer having a thickness of 1 mm or less, said polymer layer being at least 10 times as thick as the film, said film layer providing a fluid permeation barrier against one or more of the fluids methane, hydrogen sulphides, carbon dioxides and water, which is higher than the fluid permeation barrier provided by the polymer layer determined at 50 °C and a pressure difference of 50 bar, and said polymer layer being bonded to said film layer.

1. Hardy does not disclose at least one film layer having a thickness of 1 mm or less, said polymer layer being at least 10 times as thick as the film.

The Office action states that the phrase “having a thickness of 1 mm or less, said polymer layer being at least 10 times as thick as the film” is interpreted as non-limiting as it includes values of “zero”. Applicants respectfully disagree.

The term “at least” means “not less than” (Webster's Online Dictionary). Thus, the phrase “said polymer layer being at least 10 times as thick as the film” means “said polymer layer is not less than 10 times as thick as the film.” In other words, the minimum value of the range “at least 10” is 10. Thus, it does not include a value of “zero”.

Also, the phrase “having a thickness of 1 mm or less” does not include a value of “zero”. According to MPEP §2173.05(c), the term “up to” includes zero as a lower limit, *In re Mochel*, 470 F.2d 638, 176 USPQ 194 (CCPA 1974); and “a moisture content of not more than 70% by weight” reads on dry material, *Ex parte Khusid*, 174 USPQ 59 (Bd. App. 1971). *In re Mochel*, the court held that the phrase “up to 5% K₂O” includes “0% K₂O.” However, since MPEP §2173.05(c) has a title “Numerical Ranges and Amounts Limitations”, the above rule only

applies an amount limitation. Here, the phrase "1 mm or less" is not an amount limitation, but a thickness limitation. Thus, it does not include a value of "zero". In fact, a thickness of 0 mm does not make sense at all.

Accordingly, because the phrase "having a thickness of 1 mm or less, said polymer layer being at least 10 times as thick as the film" does not include values of "zero", it should not be interpreted as non-limiting.

Hardy fails to disclose the polymer layer being at least 10 times as thick as the film. Also, the thickness of the jacket 19 or the internal tube 12 disclosed in Examples 1-4 of Hardy is 6, 5 or 10 mm which is outside of the claimed range. There is no disclosure in Hardy that any of the layers has a thickness within the claimed range.

2. Hardy does not disclose that said film layer provides a fluid permeation barrier against one or more of the fluids methane, hydrogen sulphides, carbon dioxides and water, which is higher than the fluid permeation barrier provided by the polymer layer determined at 50 °C and a pressure difference of 50 bar.

The Office action states that Hardy inherently teaches the above feature. Applicants respectfully disagree.

According to MPEP §2112, in relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Here, the examiner fails to provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic of claim 1 necessarily flows from the teachings of Hardy.

3. Hardy does not disclose that said polymer layer is bonded to said film layer in a flexible unbonded pipe.

The Office action states that Hardy teaches multiple plastic and metal layers 12-17 bonded to each other. However, there is no disclosure in Hardy that these layers 12-17 are bonded to each other.

Instead, it is implied in Hardy that the layers 12-17 are not bonded to each other for the following reason. The flexible tubular conduit 11 of FIG. 3 comprises the layers 12-17. In order for the tubular conduit 11 to be flexible, a person skilled in the art would understand that the layers 12-17 cannot be bonded to each other without losing its flexibility and becoming a stiff pipe. Once the layers 12-17 were bonded to each other, the tubular conduit 11 would no longer be flexible. Thus, the layers 12-17 of Hardy are not bonded to each other.

On the other hand, the present invention relates to a modification of a layer of an unbonded pipe, the modification consists in that a layer of the unbonded pipe is replaced by a particular combined bonded polymer layer/film layer.

Therefore, since every limitation of claim 1 is not taught by the reference, claim 1 is not fully anticipated by Hardy. Because Hardy does not meet all of the limitations of claim 1, Hardy does not render claim 1 obvious. Thus, withdrawal of the rejection as it applies to claim 1 is respectfully requested.

Regarding claims 50, 51 and 54, Hardy does not disclose, teach or render foreseeable said polymer layer being bonded to said film layer, as discussed above regarding claim 1. It should be observed that the silane-crosslinking described in Hardy does not establish any bonding to a wire applied around the polyethylene with grafted silane functions, unless such silane functions are also grafted to the wire. Accordingly, Hardy does not disclose a bonding between an inner layer 12 and a wired layer 13. Therefore, since every limitation of claim 50, 51 or 54 is not taught by the reference, claims 50, 51 and 54 is not fully anticipated by Hardy. Because Hardy does not meet all of the limitations of claim 50, 51 or 54, Hardy does not render claims 50, 51 and 54 obvious. Thus, withdrawal of the rejection as it applies to claims 50, 51 and 54 is respectfully requested.

In addition, regarding claim 51, Hardy does not also disclose, teach or render foreseeable the interfacial bonding between the polymer layer and the film layer being sufficiently strong to prevent creation of gas pockets between the layers when subjected to an increased carbon dioxide pressure of 5 bar on the film side of the pipe. The Office action states that Hardy inherently teaches the above feature. However, as discussed above regarding claim 1, the examiner fails to provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic of claim 51 necessarily flows from the teachings of Hardy.

Moreover, regarding claim 54, Hardy does not disclose, teach or render foreseeable said bondings being established by the cross-linking of the polyethylene, because Hardy does not disclose said polymer layer being bonded to said film layer, as discussed above regarding claim 1.

Claims 2-3, 12-17, 19, 21-29, 36 and 38 which are directly or indirectly dependent from claim 1 should also be allowable for at least the same reason.

Claim 52 which are dependent from claim 50 should also be allowable for at least the same reason.

Claim Rejections - 35 USC § 103

Claims 10-11, 18, 31-35, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardy (US 5,514,312) in view of Procida et al (US 2001/0021426; hereinafter "Procida"). Applicants respectfully request withdrawal of the rejection for at least the following reasons.

Claims 10-11, 18 and 31-35 are dependent from claim 1. Thus, all of the limitations of claim 1 are included in claims 10-11, 18 and 31-35.

Regarding claims 10-11, 18 and 31-35, neither Hardy nor Procida, alone or in combination, discloses, teaches or renders foreseeable at least one film layer having a thickness of 1 mm or less, said polymer layer being at least 10 times as thick as the film, said film layer providing a fluid permeation barrier against one or more of the fluids methane, hydrogen sulphides, carbon dioxides and water, which is higher than the fluid permeation barrier provided by the polymer layer determined at 50 °C and a pressure difference of 50 bar, and said polymer layer being bonded to said film layer.

Hardy does not disclose the above feature, as discussed above regarding claim 1.

There is no disclosure in Procida that said polymer layer is bonded to said film layer. Instead, the pipe disclosed in Procida is an unbonded flexible pipe which means that the layers of the pipe are not bonded. This disclosure teaches away from the present invention which requires that said polymer layer is bonded to said film layer. Also, there is no disclosure in Procida that at least one film layer has a thickness of 1 mm or less, that said polymer layer is at least 10 times as thick as the film, and that said film layer provides a fluid permeation barrier against one or more of the fluids methane, hydrogen sulphides, carbon dioxides and water, which is higher than the fluid permeation barrier provided by the polymer layer determined at 50 °C and a pressure difference of 50 bar.


Regarding claim 53, neither Hardy nor Procida, alone or in combination, discloses, teaches or renders foreseeable said polymer layer being thicker than said film layer, said film layer being a wounded or folded film layer, and said polymer layer being bonded to said film layer.

In consideration of the foregoing analysis, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. NKTR-46238.

Respectfully submitted,

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